

Is school making your child ill? (part I)

By WENDY PRIESNITZ

Are our children's health and learning experiences suffering because of subtle exposure to a variety of twentieth century chemicals in their school rooms?

John Zupancic, the director of the York Region Roman Catholic Separate School Board, thinks this is a strong possibility. He says that he has become seriously concerned with the possibility that an unknown number of students are being harmed in a variety of ways by fumes from every-day substances and practices in their school environments.

Zupancic claims that his board's increased awareness about indoor air pollution has been created by the current drive for smoke-free schools that was initiated by principals and teachers' federations. But his personal concern about the potential damage to health and learning through exposure to harmful substances in the school was greatly increased recently when a parent described to him how a school building can make his child ill.

The story that parent told to John Zupancic may have much in common with the experiences of the mothers in the following descriptions.

Unexplained Illnesses

"In her daughter's case, the illness began, along with the painting (in the school), in September. She had a cold for three weeks after school began, after which she experienced exhaustion and headaches. The mother described how this fatigue

continued intermittently during the time the painting was in process, accompanied by dizziness, headaches, and swollen fingers. The symptoms would appear after spending five minutes in the school building, subside after a weekend at home, then reappear once the child returned to school."

"The girl had formerly been an excellent student, receiving high marks and participating in many school activities. Now her marks are close to the pass level and she has great difficulty concentrating. She experiences problems with the air in the school washroom which is polluted with ... hair cosmetics. In the classroom, the smell of paper reproduced by means of ditto copiers causes her to have difficulty thinking and leaves her feeling confused. Floor cleaners and disinfectants, especially those used in the school cafeteria, create similar problems for this student."

"After the Christmas holidays that year, (another child) became so ill she could no longer enter the school building. The mother said she doesn't know precisely what caused her daughter's health to turn the corner, but she had many symptoms: severe body temperature fluctuations, headaches, inability to concentrate, fatigue, a tendency to burst into tears when asked questions. A doctor diagnosed a virus and advised the girl to stay home and recover. Upon returning to school, her symptoms returned with 20 minutes of being in the

building, so she finished the school year with a home tutor."

"She feels that her daughter's sensitivities developed due to over-exposure to chemicals and that it is a spreading phenomenon. It is her opinion that her daughter isn't an isolated case, but only the tip of the iceberg, with the problems accelerating in seriousness if kids continue to be exposed to so many harmful chemicals. For instance, she has a son, always thought of as the healthiest child in the family, who has suddenly become sick since painting began in his school."

"A third mother described an incident that occurred in a chemistry class. Apparently there was some trouble lighting the bunsen burners and some gas escaped into the room. The girl turned gray and fainted."

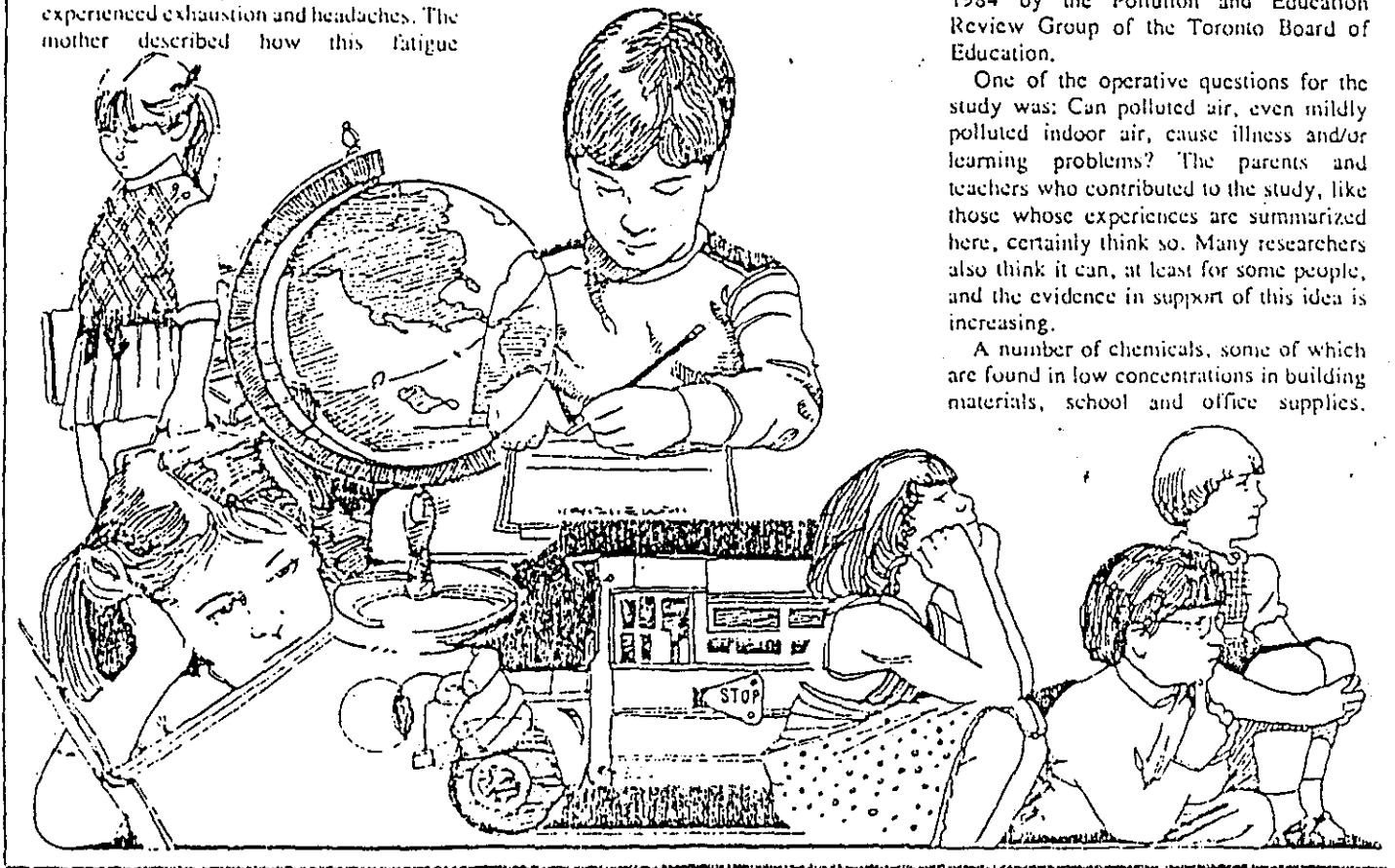
Data Gathering

The three women whose comments are summarized here were among many teachers, parents and interested individuals who spoke in February 1985, at Toronto's Riverdale Collegiate at a public meeting to hear people's experiences regarding pollution and education.

A complete summary of their comments appears in "Recommendations for Action on Pollution and Education in Toronto: A Report" (by Bruce M. Small & Associates Ltd., May 1985). The report is the result of a pioneering study commissioned in late 1984 by the Pollution and Education Review Group of the Toronto Board of Education.

One of the operative questions for the study was: Can polluted air, even mildly polluted indoor air, cause illness and/or learning problems? The parents and teachers who contributed to the study, like those whose experiences are summarized here, certainly think so. Many researchers also think it can, at least for some people, and the evidence in support of this idea is increasing.

A number of chemicals, some of which are found in low concentrations in building materials, school and office supplies,



cleaning and pest-control materials, have been found to effect the nervous system, possibly causing concentration and learning problems. In fact, researchers are discovering the harmful effects of the emissions from literally hundreds of modern chemicals. Governments are becoming concerned about the health effects related to various levels of ventilation and emissions from insulating materials, especially in the newer air-tight buildings.

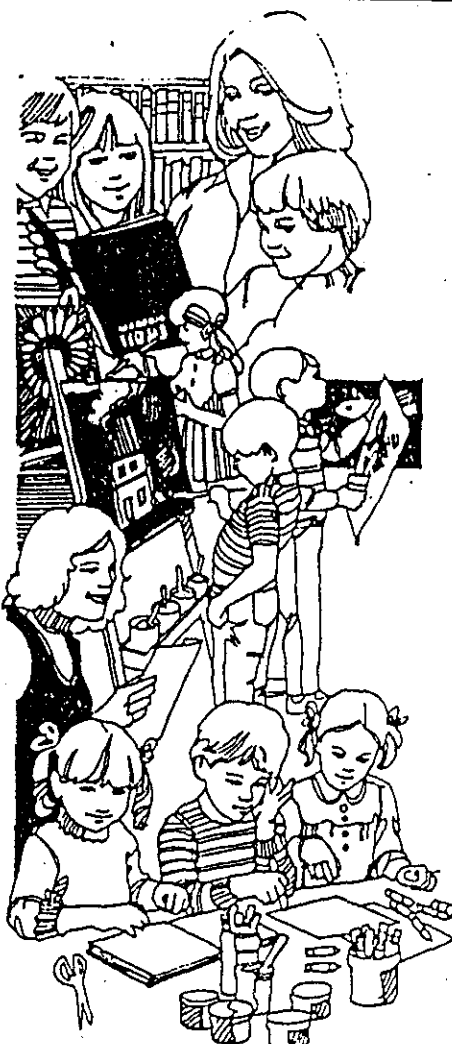
In his report for the Toronto Board of Education, Bruce Small, an indoor air quality expert who lives near Stouffville, states, "Low levels of chemical exposures commonly found in our ... homes, offices and schools may indeed be sufficient to bring on discomfort and even physical and mental disease, at least for some of us."

There are a number of reasons for this rather insidious health threat. Current research shows that chronic low-level exposures to many twentieth century chemicals over a long period of time may be as dangerous, if not more so in some cases, as the intense, high-level exposures that are more commonly recognized to be toxic. This negative result of chronic low-level exposures may be explained by the combined action or "synergistic effect" of pollutants, where substances interact to create a greater danger than the equivalent level of each substance would by itself.

In addition, some people may be more vulnerable than others to the negative health effects of indoor air pollutants. Some people may never get sick as a result of exposure to air pollutants while others may be 'highly chemically sensitive or "hypersusceptible."

But it would be a mistake to think, as illustrated by the three examples quoted earlier, that only a specially pre-disposed group of people are affected. People with allergies are usually among those affected first and most severely by indoor pollutants, but normally healthy people can also experience negative effects, including permanent disability in some cases, from contact with chemical substances. While a tendency to sensitivities and allergies may be inherited, researchers have shown that susceptibility can be *created* in people who have been previously healthy.

A related aspect of hypersusceptibility that is not well known, but one that helps make it such a serious and potentially long-term problem, is what some researchers have called a "spreading phenomenon." Once a person is sensitized to one substance, continued exposures may result in adverse reactions at lower levels of exposure to that same substance, and to low-level exposure of other chemicals as well. Chemical sensitivity appears to be an increasing, albeit newly recognized, occurrence. Judge George Thompson recently chaired a Provincial Ministry of



Health Committee on Environmental Hypersensitivity Disorders. After extensive investigation and consultation, a report was issued which began, "... Our study of ... environmental hypersensitivity raised our

consciousness about the role of environmental factors as a cause of human illness. It seems clear that we are inexorably increasing the toxicity of our environment." The report deplored the lack of "adequate information about the effects of low dose exposure over long periods or possible synergistic effects of long-term exposure to many chemicals."

On-going studies around the world seem to concur with the Toronto Board of Education's assessment of how air pollution is affecting, not only the health of staff and students, but also their education. For instance, from a clinical researcher at Alberta Children's Hospital comes a list of situations and substances within the school setting that have been found to negatively affect health, learning and behavior of children who are environmentally sensitive: painting in the school, Gestetner-copied materials, scented washroom products, school room supplies such as art materials, synthetic rugs and curtains, plastic gym mats, cleaning compounds, mold inhibitors, insecticides, school bus exhaust, and tarring of roofs or playgrounds.

Bruce Small, who, in addition to authoring the report for the Toronto Board of Education, has written many reports on chemical hypersusceptibility and indoor air quality, including one on urea-formaldehyde foam insulation, feels that the biggest threat concerning pollution and education is construction and renovation while school is in sessions. The consequences of a construction incident "are not just one-time but may be the beginnings of a lifelong illness for some people."

In part two of "Is School Making Your Child Ill" we shall look at how the two regional boards of education are attempting to minimize the pollution potentials.

Towards a safer school environment

Is school making your child ill? (Part 2)

By WENDY PRIESNITZ

In "Is school making your child ill?" Part 1, we examined the pollutants within schools that could be having a deleterious effect on the health of the students and staff.

What are our boards of education doing about this potential time bomb of a problem?

When the Separate School Board's John Zupancic realized the potential seriousness of the threat posed to both staff and students, he acted quickly. At the end of January, a staff clean air committee was set up under the chairmanship of Charlie Smith, the board's health and physical education consultant. Although the immediate issue being tackled by the committee is smoking, Zupancic says that it will be looking into the health effects of all practices and materials in schools.

He personally feels a strong responsibility to "advise the board that we need to provide a safe learning environment." If a synthetic carpet, or its glue, or painting during school hours, or anything else, is going to cause health or learning problems for even a few individuals, Zupancic says his board has a moral obligation to consider alternatives or ways to minimize the hazard.

He feels that his approach is "the way of the future" and hopes that his board's research into the causes of indoor air pollution in schools will "save it money and grief in the long run." In addition to investigating the available scientific research on the subject, Zupancic suggests that children in the system who have allergies and sensitivities could be monitored as a way of learning more about what affects them. He is convinced that not only school boards, but governments must do more research into the subject.

Public Board Practices

Ron McKnight, the superintendent in charge of plants and sites for York Region Board of Education, says that he and his colleagues have been aware of the problem for some time and that the Toronto Board's report is being studied by his board. He remarks that "on first glance, it would appear that many of the report's recommendations (to curb pollution in schools) are already in place in York Region."

And it does seem that much has been done to ensure clean air in the board's schools. McKnight cites such positive policies as those banning smoking in schools and making product chemical ingredients available to custodial staff. Painting is "usually restricted to the afternoon shift, rooms being painted are

isolated off the air system, and a portable charcoal filtration unit is used to restrict odors from moving throughout the school and to protect the painters." Pesticide spraying is usually done over the weekend, "unless a principal decides otherwise." Also, various department head committees meet regularly with the board's new health and safety officer, Graeme Gilday, to review practices and ensure that students are not exposed unnecessarily to toxic materials.

Unfortunately, despite the best intentions, indoor air pollution problems do arise, due both to circumstances and



JOHN ZUPANCIC

incomplete knowledge. The new Unionville High School is a prime example. When school opened last September, construction of parts of the building was still underway, resulting in students and staff being exposed to a variety of pollutants, including construction dust, uncovered insulation, paint and varnish fumes, and caulking compounds. While the school has not documented negative reactions, many of the building's inhabitants have experienced, from time to time since school began, headaches, stomach aches and nasal congestion. It is unknown how much, if any, permanent damage has been done due to exposure to paint, varnish and solvent fumes, for example.

But there is much documented evidence that fumes from construction materials can cause symptoms that range from headache, muscle weakness, fatigue and nausea to fuzzy thinking, central nervous system depression and/or damage and permanent sensitization to other chemicals. Often new ventilation systems that are not completely balanced, or unsatisfactory ventilation due to concerns about energy efficiency may worsen the problem.

Fortunately, McKnight feels that the UHS problem is an isolated one, caused by the extreme rush to occupy the high school. He says that new schools normally aren't occupied until a month or so after construction is finished. New elementary schools in the area, for instance, due to be finished this spring and not scheduled to be occupied by students until September, allow the construction activity and any residual fumes to be things of the past, says McKnight.

Problems for Boards

At a recent conference in western Canada, Air Pollution Control Association vice-president Steve Hart stated, "Indoor air pollution is probably the most serious environmental problem of the future." New research developments may modify the scientific community's understanding of indoor air pollutants and their effects, but there is more than enough evidence that pollutants are present in our schools than can impede education and have long-term health effects.

Unfortunately, this new awareness will put increased demands on school boards' already strained budgets and human resources. Nevertheless, the report done for the Toronto Board of Education reflects a growing awareness on the part of the trustees that school boards must attempt to provide an optimum learning environment for all children: "If the Board may be required, under Bill 82, to provide special education environments for exceptional students, provisions for the most sensitive students could become prohibitively expensive."

Bruce Small, whose company wrote the Toronto report, introduces another tricky aspect of the issue, noting "indoor air pollution in schools is a severe liability problem. There is no way of predicting who will be badly affected by seemingly minor exposures to chemicals. Parents in Toronto are presently organizing for political and legal action around the issue of pollution and education in a group called Parents for Education Without Pollution (PEWP). Boards of education may soon find themselves in a difficult insurance situation because they may be damaging the health of students and, in the present insurance climate, they may not be covered."

Was the unusually low mark your child scored on a test last week due to fuzzy thinking caused by fumes from the cork wall covering in the classroom? Is your hyperactive child reacting to food additives in his or her lunch? Do we know enough about the environment in which our children spend a large part of their day?